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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/551,332	04/18/00	BALUN	K 12187-19

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EXAMINER

WINSTEDT, J

ART UNIT PAPER NUMBER

2872

DATE MAILED: 03/13/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/551,332

Applicant(s)

BAUN ET AL.

Examiner

Jennifer E Winstedt

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 December 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-12 and 20-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-12 and 20-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☒ The proposed drawing correction filed on 22 December 2000 is: a) ☒ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☐ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 18) ☒ Interview Summary (PTO-413) Paper No(s). 11
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other:

DETAILED ACTION

Drawings

1. The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on 12/22/00 have been approved.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 6, 7, 8, 9, 10, 11, and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 6, the phrases "for communication to the intelligent motor control processor" in lines 13-14 of the claim and "wherein the intelligent motor control processor" in line 14 of the claim are indefinite. There are two intelligent motor control processors recited above. Which of the two intelligent motor control processors is meant? Since claims 7-12 depend on claim 6, they inherit this rejection.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

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the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 6, 7, 8, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krewalk et al. (U.S. Patent 4,682,091) in view of Leblanc (U.S. Patent 5,882,116).

Regarding claims 6 and 20, Krewalk et al. discloses an automated telescope system of the type including a telescope mounted for rotation about two substantially orthogonal axes, the automated telescope system comprising first and second motor portion, each coupled to rotated the telescope about a respective one of the axes, each motor portion including a motor having a rotatable shaft (54, 126, Figure 8); and an optical encoder coupled to the motor shaft (46, 206, 134, 208, Figure 8), the encoder defining motor movement feedback signals (column 21, line 68 – column 22, line 4); an intelligent motor control processor for commanding motor movement and evaluating optical encoder feedback signals for both motors (180, Figure 8); and a command unit connected to each motor portion over a respective serial communication bus, the command unit receiving a desired telescope movement input from a user and developing appropriate control signals for communication to the intelligent motor control processor (196, Figures 1 and 8), wherein the intelligent motor control processor independently develops motor movement commands in operative response to control signals received from the command unit (see Figures 8 and 9). Krewalk et al. does not disclose each motor portion having its own intelligent motor control processor. Leblanc discloses that motor portions each having its own motor control is well known (101, 102, Figure 1). It would have been obvious to one of ordinary skill in the art at the time the

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invention was made to have the motor portions of Krewalk et al. each have their own intelligent motor control processor as Leblanc suggests, since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. *Nerwin v. Erlichman*, 168 USPQ 177, 179.

Regarding claims 7 and 8, the combination discloses that the command unit further comprises a housing (see Figure 1; Krewalk et al.); a keypad, disposed on the housing for manipulation by a user to define a desired telescope movement input (196, figure 1; Krewalk et al.); a microcontroller, disposed within the housing, the microcontroller translating user manipulation of the keypad into control signals, the control signals directed to each motor portion over the serial communication bus (column 14, lines 33-35 and column 19, lines 50-53; Krewalk et al.); a memory (column 14, lines 43-44; Krewalk et al.); and a microprocessor, wherein the memory is adapted to host application software program code, executable by the microprocessor, the microprocessor performing high level application software execution tasks and numerical processing in order to define commands to the microcontroller, the microcontroller translating the commands into control signals for each motor portion (column 14, line 33 – column 20, line 49; Krewalk et al.). The combination does not disclose the housing being configured to be comfortably hand held. Krewalk et al. discloses that housing being configured to be comfortably hand held are well known (184, Figure 1). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the housing of the combination be configured to be

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comfortably hand held as Krewalk et al. suggests in order to make the command unit easier to handle.

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Krewalk et al. in view of Leblanc as applied to claims 6, 7, 8, and 20 above, and further in view of Whitmore (U.S. Patent 6,108,277).

Regarding claim 9, Krewalk et al. in view of Leblanc discloses a first database, contained in memory, the first database including a catalog of celestial objects, each identified by a set of celestial coordinates (226, Figure 9). Krewalk et al. in view of Leblanc does not disclose second database, contained in memory, the second database including a catalog of geographical locations, each identified by a set of earth-based coordinates. Whitmore discloses databases including catalogs of geographical locations, each identified by a set of earth-based coordinates, are well known (lines 16-19, Abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include in the automated telescope system of Krewalk et al. in view of Leblanc a second database including a catalog of geographical locations, each identified by a set of earth-based coordinates, as Whitmore suggests in order to allow a user to input the geographical location of the telescope without having to look at a map.

7. Claims 10, 11, 12, 13, 14, 21, 22, 23, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krewalk et al. in view Leblanc further in view of Whitmore as applied to claim 9 above, and further in view of Gagnon (U.S. Patent 4,764,881).

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Regarding claim 10, the combination discloses the claimed invention as described above except for a user identifying a geographical location indicia from the second database, proximate to the user's actual location, wherein the command unit includes program means for translating earth-based coordinates into celestial coordinates. Krewalk et al. discloses a user identifying indicia from a database (column 22, lines 63-66). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a user of the system of the combination identify a geographical location indicia from the second database as Krewalk et al. suggests in order to be able to give the location of the telescope without having to look at a map. Gagnon discloses that command units including program means for translating one coordinate system into another coordinate system are well known (see Figure 9). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the command unit of the combination include program means for translating earth-based coordinates into celestial coordinates as Gagnon suggests in order to be able to relate the location of the telescope to the location of a celestial object.

Regarding claims 11, 12, 21, 22, and 23 the combination discloses first means for determining a vertical aspect of the telescope independent of the position of a corresponding axis (208, Figure 8); second means for determining a vertical aspect of the telescope independent of the position of a corresponding axis (206, Figure 8) and that the intelligent motor control processors includes means for receiving telescope position indications from each motor portion, the processors processing the position

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indications in combination with the geographical location indicia in order to define the telescope's orientation with respect to the celestial coordinate system (see Figure 9; Krewalk et al.), wherein the processors include means for automatically traversing the telescope to a desired celestial object and for tracking the celestial path of the celestial object with further intervention by a user (column 14, lines 16-28; Krewalk et al.). The combination does not disclose the command unit including the means for receiving telescope position indications and the means for automatically traversing the telescope to a desired celestial objection and for tracking the celestial object. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the command unit include the means for receiving telescope position indications and the means for automatically traversing the telescope and tracking a celestial objection, instead of the motor processors including these means, since it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70.

Regarding claims 13 and 14, Krewalk et al. in view of Leblanc further in view of Whitmore further in view of Gagnon discloses that the telescope can be provided in an alt-azimuth configuration or a polar configuration (lines 4-5, Abstract; Krewalk et al.).

Regarding claim 24, the combination discloses that means for automatically inputting a time parameter (column 20, lines 57-63).

Response to Arguments

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8. In light of the amendments made to the specification and drawings, the objections made to the specification and drawings are withdrawn.

9. Applicant's arguments filed 12/22/00 have been fully considered but they are not persuasive.

In response to applicant's argument that Krewalk et al. discloses a telescope system having a single microprocessor kernel 180, the examiner must point out that the PC 196 would constitute a second processor within the telescope system.

In response to applicant's argument that Krewalk et al. does not disclose a position indication means, the examiner must point out that the fins 46 and 134 in combination with sensors 206 and 208 respectively constitute position indication means.

In response to applicant's argument that Krewalk et al. does not discloses a first and second processor means connected to each other by a communication bus, the examiner must point out that the first process means (180; Figure 8) and the second processor means (196, Figure 8) are connected to each other by a communication bus (see Figures 1 and 8).

In response to applicant's argument that the first and second means for determining an initial horizontal and vertical aspect of the telescope and the means for defining a geographical indicia must be construed in accordance with the corresponding structure as set forth in the specification, the examiner must point out that the specification does not explicitly state the structure of the first and second means or the structure of the means for defining a geographical indicia. This being the case, an equivalent structure (i.e. a structure performing the same function) reads on the claim.

In response to applicant's argument that Krewalk sensors 206 and 208 merely indicate when the Krewalk axes are in the initial position, but can do nothing more to determine any subsequent positioning of the telescope, the examiner must point out that claim 21 only requires at the first and second means determine a horizontal aspect and a vertical aspect of the telescope. The sensors 206 and 208 indicating when the Krewalk axes are in the initial position qualifies as determining a horizontal aspect and a vertical aspect of the telescope.

In response to applicant's argument that the personal computer of Krewalk is additional structure outside the telescope system, the examiner must point out that the personal computer is considered the command module and is therefore a part of the telescope system.

In response to applicant's argument that the personal computer of Krewalk is just an user interface (argument found in interview summary), the examiner must point out that the personal computer is still a processor and thus is considered the recited command unit.

In response to applicant's argument that the Krewalk's occulting disc is not an encoder, the examiner must disagree. When the fin of the occulting disc moves from the sensor 208, a reference signal is generated to the processing kernel 180 (column 21, line 68 – column 22, line 4). This reference signal is a position feedback signal. Since the fin and the sensor supply the kernel with a position feedback, together they constitute an encoder.

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In response applicant's argument that Leblanc does not disclose intelligent motor control processors, the examiner must point out that Leblanc is used solely for the purpose of illustrating that motor portions having their own controls instead of one control controlling both motor portions is well known. The examiner would also like to point out that case law has held that constructing a formerly integral structure in various elements involves only routine skill in the art. *Nerwin v. Erlichman*, 168 USPQ 177, 179.

In response to applicant's argument that combining the servo loops of Leblanc with the telescope system of Krewalk et al. would not give two motor portions each with an intelligent motor control processor, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

In response to applicant's argument that Krewalk does not disclose a separate microcontroller and microprocessor, the microcontroller translating user keypad manipulation into control signals and the microprocessor posting application software program code, the examiner must point out that the personal computer 196 has both the microcontroller and the microprocessor (column 14, line 33 – column 20, line 49).

In response to applicant's argument's against Whitmore, the examiner must point out that Whitmore is used solely for the purpose of illustrating that databases including

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geographical data are well known. The motivation to put a database including geographical data in the telescope system of Krewalk is to make using the system easier since someone using the telescope system would then not have the have a map handy.

In response to the citation of reviews of the invention, it is noted that they fail to be linked to the point of obviousness. Therefore, they are found to be non-persuasive as secondary considerations to the obviousness of the invention. (Note: the actual article entitled *A "Hot" Telescope Gets Even Hotter*, dated May 19, 1999, is not with the case. The applicant might want to resubmit it.)

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer E Winstedt whose telephone number is (703) 305-0577. The examiner can normally be reached on 7:30 - 17:00 Mon. - Fri..

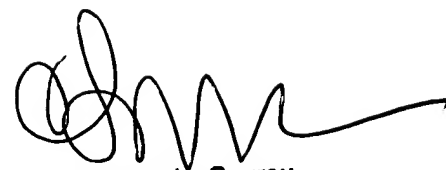
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Casandra Spyrou can be reached on (703) 308-1687. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

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JW
March 9, 2001

A handwritten signature in black ink, appearing to read 'C. Spyrou', with a long horizontal flourish extending to the right.

Cassandra Spyrou
Supervisory Patent Examiner
Technology Center 2800